

What the invention claimed is:

1. A copper/copper alloy surface bonding promotor comprising:

copper oxidant 0.1~20wt%;

5 acidic solution without halogen ion and hydrogen peroxide
5~20wt%;

nonionic compound having amino/CONH chains
(0.001~10wt%; and

deionized water to make total 100%.

10 2. The copper/copper alloy surface bonding promotor as
claimed in claim 1, wherein said acidic solution is selected from
organic acid, inorganic acid, and their mixture.

3. The copper/copper alloy surface bonding promotor as
claimed in claim 1, wherein said copper oxidant is selected from
15 potassium peroxodisulfate, sodium persulfate, potassium persulfate,
copper sulfate, copper oxide, and their mixture.

4. The copper/copper alloy surface bonding promotor as
claimed in claim 1, wherein said nonionic compound is a surfactant
soluble to water.

20 5. The copper/copper alloy surface bonding promotor as
claimed in claim 2, wherein said organic acid is selected from the
acidic group of unsaturated fatty acid and methyl Amidosulfuric
Acid .

6. The copper/copper alloy surface bonding promotor as claimed in claim 5, wherein said unsaturated fatty acid is selected from the acidic group of citric acid, malic acid, lactic acid, acrylic acid, and butyric acid.

5 7. The copper/copper alloy surface bonding promotor as claimed in claim 2, wherein said inorganic acid is selected from the acidic group of sulfuric acid, nitric acid, phosphoric acid, and Amidosulfuric Acid .

8. The usage of copper/copper alloy surface bonding
10 promotor comprising the steps of:

a) providing a circuit board having a copper/copper alloy surface;

b) microetching said copper/copper alloy surface with an etchant containing chloride ions/ferrite ions; and

15 c) roughening the etched copper/copper alloy surface with a surface bonding promotor, which comprises copper oxidant 0.1~20wt%, acidic solution without halogen ion and hydrogen peroxide 5~20wt%, and nonionic compound having amino/CONH chains 0.001~10wt%.

20 9. The usage of a copper/copper alloy surface bonding promotor as claimed in claim 8, wherein said microetching is achieved by means of spraying/immersion.

10. The usage of a copper/copper alloy surface bonding

promotor as claimed in claim 8, wherein the process of roughening the etched copper/copper alloy surface with a surface bonding promotor is preferably performed at temperature range within 20~40°C.

5 11. The usage of a copper/copper alloy surface bonding promotor as claimed in claim 8, wherein said acidic solution is selected from organic acid, inorganic acid, and their mixture.

12. The usage of a copper/copper alloy surface bonding promotor as claimed in claim 8, wherein said copper oxidant is
10 selected from potassium peroxodisulfate, sodium persulfate, potassium persulfate, copper sulfate, copper oxide, copper carbonate, and their mixture.

13. The usage of a copper/copper alloy surface bonding promotor as claimed in claim 8, wherein said nonionic compound is
15 a surfactant soluble to water.

14. The usage of a copper/copper alloy surface bonding promotor as claimed in claim 11, wherein said organic acid is selected from the acidic group of unsaturated fatty acid and methyl Amidosulfuric Acid .

20 15. The usage of a copper/copper alloy surface bonding promotor as claimed in claim 11, wherein said inorganic acid is selected from the acidic group of sulfuric acid, nitric acid, phosphoric acid, and Amidosulfuric Acid .